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ABSTRACT

Behavior settings as control systems of behavior were investigated in two first grade classes in the Tucson Early Education Program (TEEM) experimental school. The two classrooms which served as the experimental units were observed during two behavior settings, individual choice and large group. The observation consisted of recording every 10 seconds inappropriate and appropriate behavior; an observation period was 500 seconds. It was found that behavior setting large group was significantly higher in disruptive behavior than behavior setting individual choice. The high incidence of disruptive behavior during large group was maintained when large group immediately followed individual choice. It was concluded that the two settings exerted independent influences on behavior. (Author/CS)

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# Influence of Behavior Settings on Role of Inappropriate and Appropriate Behavior[1]

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The term classroom management refers to the control technologies influencing the social systems of a class. The research methodology for investigating managerial processes has often been direct observation in the natural classroom setting. Most the evidence on classroom management has been gathered by assessing teacher's behavior.

An early series of studies on teacher behavior (1, 2, 3) showed that dominative contacts of the teacher incited dominative behavior among the children; whereas, integrative teacher behavior induced pupil integrative contacts. Later studies have identified management processes by the verbal patterns of the teacher (6, 7, 11, 13). The teacher's verbal behavior has been associated with pupil attitudes toward the class, anxiety levels, achievement, and amount of disorderly behavior.

Paralleling the recent studies of teacher verbal patterns of management has been research on the control of behavior by behavior settings. The rationale underlying these investigations is the theory of psychological ecology formulated by Wright and his colleagues (12). Psychological ecology is the systematic assessment of the synomorphological relationship between behavior and the physical-environmental setting. It is held that actors perceive behavior settings as appropriate for specific actions.

Controlling behavior settings, Scott (10) evaluated the style of effective and ineffective teachers. While differences in style were found,

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Scott stated, "The behavior of any one teacher in a given setting seemed much more different from that same teacher's behavior in another setting than it did from another teacher's behavior during the same setting (10:14)." Kerkman cited by Baldwin (4) ascertained that 75 percent of student behavior conformed to the demands of behavior settings.

An experimental early childhood education project, the Tucson Early Education Program (TEEM), is subtended by a set of principles conjecturing the effect of environmental demands on the child's behavior (8). The conceptualization of environmental demands is similar to Wright's (12) formulations.

The curriculum design of TEEM stipulates structuring the classroom into areas whose milieus are identifiable by the physical properties within the given space. That is, the classroom is an arrangement of several behavior settings, each setting so constructed as to elicit specific behavioral repertoires. The provision of numerous behavioral options is assumed to induce a wider variety of classroom appropriate behavior than the usual environmental demands of attending the teacher. Following the line of inquiry of psychological ecology and the formulations of TEEM, the influence of behavior settings was conceived as most appropriate for this study.

Behavioral Settings

There are at least three behavior settings designated by TEEM in the temporal organization of a school day. These settings are committee time (C), individual choice time (IC) and large group time (LG). Two of these settings were chosen for study. Behavior setting IC is characterized by a self-selection of activities provided by the subsettings, referred to as interest centers, in the classroom. The LG behavior setting requires the

children to assemble on a rug and to engage in a teacher-directed activity such as planning and evaluation.

In one experimental first grade classroom, the first setting was breakfast following which the research teacher[3] had selected behavior setting LG. Because of individual differences in eating rate, there was an interpolated procedure of selecting a book and waiting on the rug until most of the children were ready to participate in LG. Intuitively it seemed that there was a high rate of inappropriate behavior during LG which may have derived from the environmental demands of the setting or from the temporal ordering of settings. The research teacher posed the question, "What effect would a change of settings have on the children's behavior and would the behavior during LG be different if this setting occurred subsequent to behavior seting IC?" Consequently, the experimental hypotheses were:

1. The percentage of inappropriate behavior would be significantly higher during behavior setting Large Group than during behavior setting Individual Choice.
2. The rate of inappropriate behavior would decrease for setting LG when LG was subsequent to IC.

## METHOD

### Subjects

The subjects (Ss) were pupils in two first grade classes in the TEEM experimental school. $S_1$ consisted of 20 children of whom 11 were males and 9 were females. This class participated in the validation of both hypotheses. $S_2$ contained 19 children; 12 were boys and 7 were girls. This class was used to test Hypothesis 2. Each class was composed of children who were predominantly Mexican-American and members of the lower socio-economic

class.

Materials

An observation schedule was devised for recording disruptive and appropriate classroom behavior. The sampling time was controlled by a timer which beeped every ten seconds. Attached to the timer were two earplugs.

Procedure

The observations occurred in $S_1$ between September 29, 1969, and October 30, 1969, inclusive. The temporal order of the behavior settings was experimentally manipulated. $S_2$ was observed for two consecutive days in November, 1969. Each of the behavior settings, LG and IC, were observed for 500 seconds on each day.

Large group activity and independent choice activity were alternated as the behavioral setting immediately following breakfast in $S_1$. The sequence was LG, IC, LG, and IC. Inappropriate behavior was recorded at each, between 9:20 and 9:30 for a total of 500 seconds daily. During the two periods when IC was the earlier setting, the subsequent LG activity was also observed from 10:10 to 10:20 respectively.

The observation instrument contained paired rows, each row consisting of 25 cells. Each cell represented a 10 second observation period and was scored by placing in it a diagonal tally; scoring continued until 50 cells had been marked. Disruptive behavior was scored in the lower row.

Disruptive behavior was defined as behavior which interfered with the on-going activities of others regardless of the setting. Relegated to the set of disruptive behavior was hitting, yelling, disturbing, interfering, crawling, leaving, absent, and ignoring.[4] If any one of these behaviors

occurred during the 10 second sampling period, then a cell in the disruptive behavior category was scored. In the absence of these behaviors, the category of appropriate behavior was marked.

An observer visited classroom $S_1$ during setting LG at which time the children were located on the rug. The rug was partitioned into halves with the children situated on each half being observed for 10 seconds alternately. If any S sitting on the observed half of the rug was engaged in disruptive behavior, then this 10 second sampling was scored as an incidence of inappropriate behavior. Stated simply, all children on a given half of the rug had to emit behavior appropriate to the setting for this category to be scored.

An identical observation procedure was used for setting IC with the exception that the classroom was divided into quadrants. A counterclockwise rotation was used to observe the quadrants with each quadrant being observed for 10 seconds. Absence of disruptive actions connoted behavior which was synomorphic to the setting located in that fourth of the room.

Two observers were trained to use the schedule. Interrater agreement was established by simultaneous ratings of behavior in IC for six days and in LG for eight days of the total 22 days constituting the observation period. An agreement percentage of .85 was obtained by a Pearson r procedure.

The critical limit for rejecting a statistical hypothesis was established as $p < .05$.

## Results

Hypothesis 1 predicted that disruptive behavior would be higher during behavior setting LG than during behavior setting IC. These settings were

interchanged resulting in each being the initial morning setting twice. The results of this manipulation are shown in Figure 1 which reports the number of seconds of disruptive behavior occurring during 500 seconds. Computation of a $z$ score for correlated proportions (5) revealed reliable differences between conditions ($p < .0001$) with IC being associated with fewer disruptive acts. Hypothesis 1 was accepted.

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Insert Figure 1 about here

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When the observations during LG as the first morning setting and as a later setting during the morning in $S_1$ were compared, the results were inconsistent (see Figure 2).

The $z$ scores for both periods were significant for $p < .01$. The significant difference was attributable to a higher proportion of inappropriate behavior during LG subsequent to IC in period 1 and for LG before IC for period 2. The finding of a higher rate of inappropriate behavior during LG when it followed IC was unexpected.

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Insert Figure 2 about here

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The observations in $S_2$ in which LG had always folled IC showed that disruptive behavior was significantly higher during LG than IC. A $z=7.78$ was obtained. These data supported one of the results obtained in $S_1$. The results implied that each setting has a unique influence and that LG is unaffected by the temporal ordering of settings. Consequently, Hypothesis 2 was not accepted.

## Discussion

The results obtained in this study provided considerable evidence of the control of class members' behavior by behavior settings. Behavior setting "Individual Choice" coerced significantly lower rates of disruptive behavior than behavior setting "Large Group". It appears that increasing the range of possible actions and movement space in the classroom results in the self-selection of activities appropriate to one's repertoire attendant to which is the increased potential for constructive behavior consonant with the demands of the activity. In revealing that IC was associated with lower rates of inappropriate behavior and by implication with higher rates of appropriate behavior, this research supported the claim by TEEM of the positive effects from arranging the classroom environment to provide behavioral options. The fact that disruptive behavior remained high during LG regardless of the time of day at which this setting occurred, substantiated the minimization of whole group instruction promoted by TEEM. For the first grade classes who participated in this study, the results imply that when children are permitted to utilize their own learning resources, they do so constructively. Thus these results were contrary to the popularly held notion by many teachers that involving children in didactic teacher-oriented activities increases constructive behavior.

The two behavior settings were distinguishable by amount of movement space and attending to the teacher. It may be that these forces accounted for the differential rates of disruptive behavior. One aspect which may have affected the outcomes of this study was the reinforcement contingencies of the teacher. It is reasonable to argue that during IC, teacher reinforcement practices were more contingent to discrete constructive behaviors emitted

by an individual than during LG when reinforcement is directed to the group. Such contingency management would be expected to produce higher rates of appropriate behavior. Some support for this interpretation is the evidence that TEEM teachers contrasted with non-TEEM teachers emitted more positive reinforcement and that individuals were more often the targets of such reinforcement (9).

It is possible that this higher rate of reinforcement may be a consequence of the higher rate of appropriate behavior emitted by the children when behavioral options are given. If the IC setting, which is an integral part of the experimental classroom, elicits more appropriate behavior, the children in such settings would be less likely to receive signs of disapproval from the teacher.

Some of the definintions describing the discrete behaviors which formed the set of disruptive behav ors were difficult to apply across settings. This may have inflated the rate of inappropriate behavior for LG. For instance, "leaving" was easier to identify during LG than during IC. However, inspection of the data revealed low incidences of this behavior during both settings. The fact that two observers could reliably apply this instrument to both settings indicated that this observation schedule is an effective means for evaluating behavior across settings. Maintenance of high disruptive behavior rates during LG suggests that what is needed is experimental manipulation of some of the physical and psychological properties of this setting in order to affect more appropriate behavior.

From this research it can be concluded that it is possible to develop observation schedules that provide evidence to the teacher of kinds of behavior emitted during participation in various classroom behavior settings.

Moreover, these data assert strongly that these behavior settings have differential effects on disruptive behavior. While the sample size needs extending, the experimental design leads to the conservative conclusion that similar individual choice settings promote more appropriate behavior than environmental situations requiring high attending to the teacher. The importance of an encouraging school environment is particularly marked for disadvantaged children.

## Footnotes

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3. This is the third author who volunteered to cooperate in systematic applied research.

4. Definitions of these behaviors can be obtained from TEEM.

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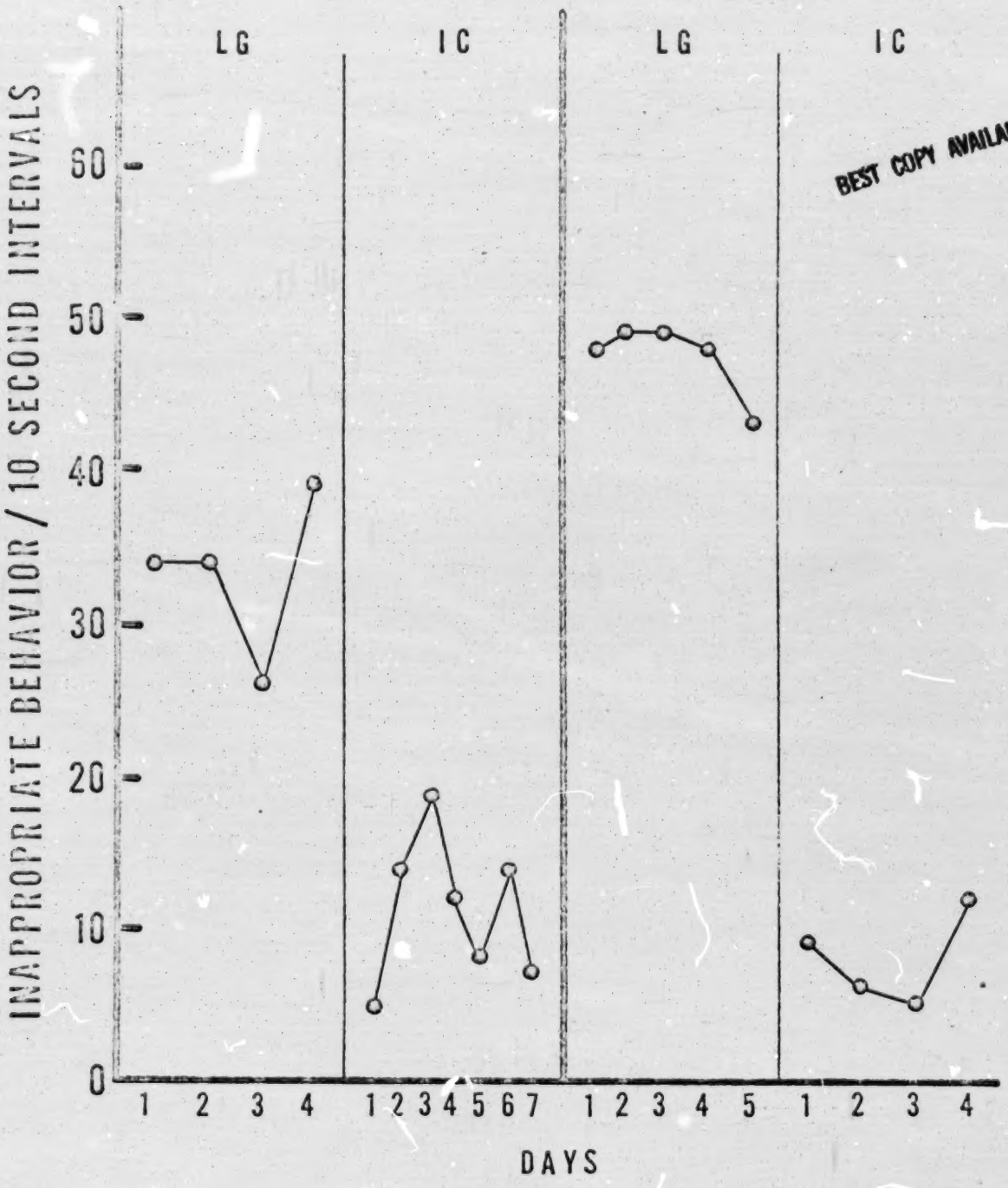


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FIG. 1. FREQUENCIES OF INAPPROPRIATE BEHAVIOR FOR LG AND IC WHEN EACH WAS INITIAL MORNING SETTING.

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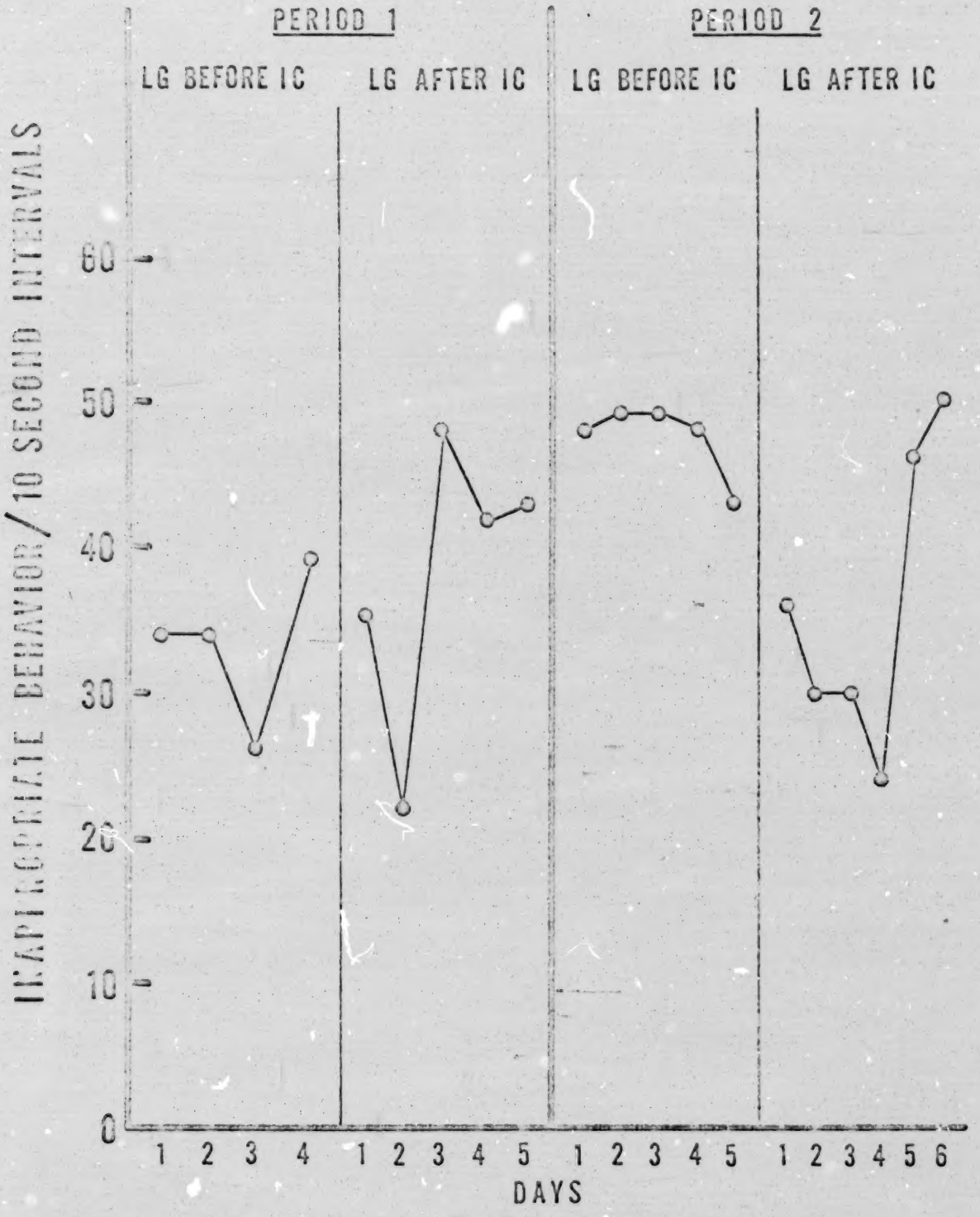


FIG. 2. RATE OF INAPPROPRIATE BEHAVIOR FOR LG PRIOR AND SUBSEQUENT TO IC.